

=> file medline hcaplis biosis biotechds embase scisearch
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FULL ESTIMATED COST	0.42	0.42

FILE 'MEDLINE' ENTERED AT 12:09:59 ON 16 APR 2007

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=> s sucrose-6-phosphate phosphatase and dna
L1 2 SUCROSE-6-PHOSPHATE PHOSPHATASE AND DNA

=> dup rem l1
PROCESSING COMPLETED FOR L1
L2 1 DUP REM L1 (1 DUPLICATE REMOVED)

=> d l2 ibib ab

L2 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2004:80870 HCAPLUS
DOCUMENT NUMBER: 140:141081
TITLE: Use of sucrose-6-phosphate
phosphatase and transgenic plants expressing
this enzyme for herbicide screening
INVENTOR(S): Ehrhardt, Thomas; Sonnewald, Uwe; Boernke, Frederik;
Chen, Shuai
PATENT ASSIGNEE(S): Basf Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 91 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004009808	A1	20040129	WO 2003-EP7686	20030716
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,			

KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,
 FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
 AU 2003250072 A1 20040209 AU 2003-250072 20030716
 EP 1527168 A1 20050504 EP 2003-764996 20030716
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK
 US 2006035786 A1 20060216 US 2005-522096 20050124
 PRIORITY APPLN. INFO.: DE 2002-10233522 A 20020723
 WO 2003-EP7686 W 20030716

AB The invention relates to the use of sucrose-6-phosphate phosphatase as a target for herbicides. The invention also relates to the use of sucrose-6-phosphate phosphatase in a method for identifying compds. having a herbicidal or growth-regulatory action and inhibiting saccharose-6-phosphate phosphatase. The invention further relates to the use of the compds. identified by said method, as herbicides or growth regulators. Thus, transgenic tobacco plants expressing antisense sucrose-6-phosphate phosphatase nucleic acids exhibited growth retardation and chlorotic leaves.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

```
=> s registry
75% OF LIMIT FOR TOTAL ANSWERS REACHED
L3      7360446 REGISTRY
```

=> file registry		SINCE FILE	TOTAL
COST IN U.S. DOLLARS		ENTRY	SESSION
FULL ESTIMATED COST		12.49	12.91
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)		SINCE FILE	TOTAL
CA SUBSCRIBER PRICE		ENTRY	SESSION
		-0.78	-0.78

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STRUCTURE FILE UPDATES: 15 APR 2007 HIGHEST RN 930272-82-5
 DICTIONARY FILE UPDATES: 15 APR 2007 HIGHEST RN 930272-82-5

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TSCA INFORMATION NOW CURRENT THROUGH December 2, 2006

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REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/UG/regprops.html>

```
=> s sucrose-6-phosphate phosphatase
2108 SUCROSE
8374583 6
```

253300 PHOSPHATE
 27988 PHOSPHATASE
 L4 0 SUCROSE-6-PHOSPHATE PHOSPHATASE
 (SUCROSE (W) 6 (W) PHOSPHATE (W) PHOSPHATASE)

 => s sucrose 6-phosphate phosphatase
 2108 SUCROSE
 8374583 6
 253300 PHOSPHATE
 27988 PHOSPHATASE
 L5 0 SUCROSE 6-PHOSPHATE PHOSPHATASE
 (SUCROSE (W) 6 (W) PHOSPHATE (W) PHOSPHATASE)

 => s sucrose 6-phosphate phosphohydrolase
 2108 SUCROSE
 8374583 6
 253300 PHOSPHATE
 1207 PHOSPHOHYDROLASE
 L6 0 SUCROSE 6-PHOSPHATE PHOSPHOHYDROLASE
 (SUCROSE (W) 6 (W) PHOSPHATE (W) PHOSPHOHYDROLASE)

 => s sucrose-6-phosphate phosphohydrolase
 2108 SUCROSE
 8374583 6
 253300 PHOSPHATE
 1207 PHOSPHOHYDROLASE
 L7 0 SUCROSE-6-PHOSPHATE PHOSPHOHYDROLASE
 (SUCROSE (W) 6 (W) PHOSPHATE (W) PHOSPHOHYDROLASE)

 => s sucrose phosphate phosphohydrolase
 2108 SUCROSE
 253300 PHOSPHATE
 1207 PHOSPHOHYDROLASE
 L8 0 SUCROSE PHOSPHATE PHOSPHOHYDROLASE
 (SUCROSE (W) PHOSPHATE (W) PHOSPHOHYDROLASE)

 => s sucrose phosphate phospho
 2108 SUCROSE
 253300 PHOSPHATE
 53763 PHOSPHO
 L9 0 SUCROSE PHOSPHATE PHOSPHO
 (SUCROSE (W) PHOSPHATE (W) PHOSPHO)

 => s sucrose phosphate phosphophatase
 2108 SUCROSE
 253300 PHOSPHATE
 0 PHOSPHOPHATASE
 L10 0 SUCROSE PHOSPHATE PHOSPHOPHATASE
 (SUCROSE (W) PHOSPHATE (W) PHOSPHOPHATASE)

 => file medline hcaplis biosis biotechds embase scisearch
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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	126.90	139.81
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	0.00	-0.78

FILE 'MEDLINE' ENTERED AT 12:15:12 ON 16 APR 2007

FILE 'HCAPLUS' ENTERED AT 12:15:12 ON 16 APR 2007

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=> s sucrose-6-phosphate phosphohydrolase

L11 1 SUCROSE-6-PHOSPHATE PHOSPHOHYDROLASE

=> d l11 ibib ab

L11 ANSWER 1 OF 1 EMBASE COPYRIGHT (c) 2007 Elsevier B.V. All rights reserved on STN

ACCESSION NUMBER: 2003254565 EMBASE

TITLE: Crystal structure of a phosphatase with a unique substrate binding domain from *Thermotoga maritima*.

AUTHOR: Shin D.H.; Roberts A.; Jancarik J.; Yokota H.; Kim R.; Wemmer D.E.; Kim S.-H.

CORPORATE SOURCE: S.-H. Kim, Physical Biosciences Division, Lawrence Berkeley Natl. Laboratory, Berkeley, CA 94720, United States.
SHKim@cchem.berkeley.edu

SOURCE: Protein Science, (1 Jul 2003) Vol. 12, No. 7, pp. 1464-1472.

Refs: 46

ISSN: 0961-8368 CODEN: PRCIEI

COUNTRY: United States

DOCUMENT TYPE: Journal; Article

FILE SEGMENT: 004 Microbiology

LANGUAGE: English

SUMMARY LANGUAGE: English

ENTRY DATE: Entered STN: 17 Jul 2003

Last Updated on STN: 17 Jul 2003

AB We have determined the crystal structure of a phosphatase with a unique substrate binding domain from *Thermotoga maritima*, TM0651 (gi 4981173), at 2.2 Å resolution by selenomethionine single-wavelength anomalous diffraction (SAD) techniques. TM0651 is a member of the haloacid dehalogenase (HAD) superfamily, with sequence homology to trehalose-6-phosphate phosphatase and sucrose-6(F)-phosphate phosphohydrolase. Selenomethionine labeled TM0651 crystallized in space group C2 with three monomers per asymmetric unit. Each monomer has approximate dimensions of 65 x 40 x 35 Å(3), and contains two domains: a domain of known hydrolase fold characteristic of the HAD family, and a domain with a new tertiary fold consisting of a six-stranded .beta.-sheet surrounded by four .alpha.-helices. There is one disulfide bond between residues Cys35 and Cys265 in each monomer. One magnesium ion and one sulfate ion are bound in the active site. The superposition of active site residues with other HAD family members indicates that TM0651 is very likely a phosphatase that acts through the formation of a phosphoaspartate intermediate, which is supported by both NMR titration data and a biochemical assay. Structural and functional database searches and the presence of many aromatic residues in the interface of the two domains suggest the substrate of TM0651 is a carbohydrate molecule. From the

crystal structure and NMR data, the protein likely undergoes a conformational change upon substrate binding.

=> s sucrose-6F-phosphate phosphohydrolase
L12 5 SUCROSE-6F-PHOSPHATE PHOSPHOHYDROLASE

=> dup rem
ENTER L# LIST OR (END):l12
PROCESSING COMPLETED FOR L12
L13 2 DUP REM L12 (3 DUPLICATES REMOVED)

=> d l13 ibib ab

L13 ANSWER 1 OF 2 HCPLUS COPYRIGHT 2007 ACS on STN DUPLICATE 1
ACCESSION NUMBER: 2003:513788 HCPLUS
DOCUMENT NUMBER: 139:392851
TITLE: Crystal structure of a phosphatase with a unique substrate binding domain from *Thermotoga maritima*
AUTHOR(S): Shin, Dong Hae; Roberts, Anne; Jancarik, Jaru; Yokota, Hisao; Kim, Rosalind; Wemmer, David E.; Kim, Sung-Hou
CORPORATE SOURCE: Physical Biosciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA, 94720, USA
SOURCE: Protein Science (2003), 12(7), 1464-1472
PUBLISHER: Cold Spring Harbor Laboratory Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We have detd. the crystal structure of a phosphatase with a unique substrate binding domain from *Thermotoga maritima*, TM0651 (gi 4981173), at 2.2 .ANG. resoln. by selenomethionine single-wavelength anomalous diffraction (SAD) techniques. TM0651 is a member of the haloacid dehalogenase (HAD) superfamily, with sequence homol. to trehalose-6-phosphate phosphatase and sucrose-6F-phosphate phosphohydrolase. Selenomethionine labeled TM0651 crystd. in space group C2 with three monomers per asym. unit. Each monomer has approx. dimensions of 65 .times. 40 .times. 35 .ANG.3, and contains two domains: a domain of known hydrolase fold characteristic of the HAD family, and a domain with a new tertiary fold consisting of a six-stranded .beta.-sheet surrounded by four .alpha.-helices. There is one disulfide bond between residues Cys35 and Cys265 in each monomer. One magnesium ion and one sulfate ion are bound in the active site. The superposition of active site residues with other HAD family members indicates that TM0651 is very likely a phosphatase that acts through the formation of a phosphoaspartate intermediate, which is supported by both NMR titrn. data and a biochem. assay. Structural and functional database searches and the presence of many arom. residues in the interface of the two domains suggest the substrate of TM0651 is a carbohydrate mol. From the crystal structure and NMR data, the protein likely undergoes a conformational change upon substrate binding.

REFERENCE COUNT: 46 THERE ARE 46 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l13 2 ibib ab

L13 ANSWER 2 OF 2 MEDLINE on STN DUPLICATE 2
ACCESSION NUMBER: 2001076340 MEDLINE
DOCUMENT NUMBER: PubMed ID: 11050182
TITLE: Purification, molecular cloning, and sequence analysis of sucrose-6F-phosphate phosphohydrolase from plants.
AUTHOR: Lunn J E; Ashton A R; Hatch M D; Heldt H W
CORPORATE SOURCE: Commonwealth Scientific and Industrial Research Organization Plant Industry, GPO Box 1600, Canberra, ACT

SOURCE: 2601, Australia.. john.lunn@pi.csiro.au
Proceedings of the National Academy of Sciences of the
United States of America, (2000 Nov 7) Vol. 97, No. 23, pp.
12914-9.
Journal code: 7505876. ISSN: 0027-8424.

PUB. COUNTRY: United States
DOCUMENT TYPE: Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)

LANGUAGE: English
FILE SEGMENT: Priority Journals
OTHER SOURCE: GENBANK-AF283564; GENBANK-AF283565; GENBANK-AF283566;
GENBANK-AF300455

ENTRY MONTH: 200101
ENTRY DATE: Entered STN: 22 Mar 2001
Last Updated on STN: 22 Mar 2001
Entered Medline: 11 Jan 2001

AB Sucrose-6(F)-phosphate phosphohydrolase (SPP; EC) catalyzes the final step in the pathway of sucrose biosynthesis and is the only enzyme of photosynthetic carbon assimilation for which the gene has not been identified. The enzyme was purified to homogeneity from rice (*Oryza sativa* L.) leaves and partially sequenced. The rice leaf enzyme is a dimer with a native molecular mass of 100 kDa and a subunit molecular mass of 50 kDa. The enzyme is highly specific for sucrose 6(F)-phosphate with a K_m of 65 microM and a specific activity of 1250 micromol min(-1) mg(-1) protein. The activity is dependent on Mg(2+) with a remarkably low K_a of 8-9 microM and is weakly inhibited by sucrose. Three peptides from cleavage of the purified rice SPP with endoproteinase Lys-C showed similarity to the deduced amino acid sequences of three predicted open reading frames (ORF) in the *Arabidopsis thaliana* genome and one in the genome of the cyanobacterium *Synechocystis* sp. PCC6803, as well as cDNA clones from *Arabidopsis*, maize, and other species in the GenBank database of expressed sequence tags. The putative maize SPP cDNA clone contained an ORF encoding a 420-amino acid polypeptide. Heterologous expression in *Escherichia coli* showed that this cDNA clone encoded a functional SPP enzyme. The 260-amino acid N-terminal catalytic domain of the maize SPP is homologous to the C-terminal region of sucrose-phosphate synthase. A PSI-BLAST search of the GenBank database indicated that the maize SPP is a member of the haloacid dehalogenase hydrolase/phosphatase superfamily.

=> s sucrose-6F-phosphate phosphohydrolase
L14 5 SUCROSE-6F-PHOSPHATE PHOSPHOHYDROLASE

=> d his

(FILE 'HOME' ENTERED AT 12:09:09 ON 16 APR 2007)

FILE 'MEDLINE, HCAPLUS, BIOSIS, BIOTECHDS, EMBASE, SCISEARCH' ENTERED AT
12:09:59 ON 16 APR 2007

L1 2 S SUCROSE-6-PHOSPHATE PHOSPHATASE AND DNA
L2 1 DUP REM L1 (1 DUPLICATE REMOVED)
L3 7360446 S REGISTRY

FILE 'REGISTRY' ENTERED AT 12:11:03 ON 16 APR 2007

L4 0 S SUCROSE-6-PHOSPHATE PHOSPHATASE
L5 0 S SUCROSE 6-PHOSPHATE PHOSPHATASE
L6 0 S SUCROSE 6-PHOSPHATE PHOSPHOHYDROLASE
L7 0 S SUCROSE-6-PHOSPHATE PHOSPHOHYDROLASE
L8 0 S SUCROSE PHOSPHATE PHOSPHOHYDROLASE
L9 0 S SUCROSE PHOSPHATE PHOSPHO
L10 0 S SUCROSE PHOSPHATE PHOSPHOPHATASE

FILE 'MEDLINE, HCAPLUS, BIOSIS, BIOTECHDS, EMBASE, SCISEARCH' ENTERED AT
12:15:12 ON 16 APR 2007

L11 1 S SUCROSE-6-PHOSPHATE PHOSPHOHYDROLASE

L12 5 S SUCROSE-6F-PHOSPHATE PHOSPHOHYDROLASE
L13 2 DUP REM L12 (3 DUPLICATES REMOVED)
L14 5 S SUCROSE-6F-PHOSPHATE PHOSPHOHYDROLASE

=> log y

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	16.01	155.82
DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
CA SUBSCRIBER PRICE	-0.78	-1.56

STN INTERNATIONAL LOGOFF AT 12:18:17 ON 16 APR 2007

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Search Results - Record(s) 1 through 5 of 5 returned.

1. Document ID: US 20060035786 A1

L4: Entry 1 of 5

File: PGPB

Feb 16, 2006

PGPUB-DOCUMENT-NUMBER: 20060035786

PGPUB-FILING-TYPE:

DOCUMENT-IDENTIFIER: US 20060035786 A1

TITLE: Saccarose-6-phosphate phosphatase as a target for herbicides

PUBLICATION-DATE: February 16, 2006

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Ehrhardt; Thomas	Speyer		DE
Sonnewald; Uwe	Quedlinburg		DE
Bornke; Frederik	Wuedlinburg		DE
Chen; Shuai	Gatersleben		DE

US-CL-CURRENT: 504/116.1; 435/196, 435/21, 435/320.1, 435/419, 435/6, 435/69.1, 800/284

2. Document ID: US 20050273888 A1

L4: Entry 2 of 5

File: PGPB

Dec 8, 2005

PGPUB-DOCUMENT-NUMBER: 20050273888

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050273888 A1

TITLE: Transgenic expression cassettes for expressing nucleic acid sequences in sink tissues of plants that store carbohydrate

PUBLICATION-DATE: December 8, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Heim, Ute	Gatersleben		DE
Herbers, Karin	Quedlinburg		DE
Sonnewald, Uwe	Quedlinburg		DE

US-CL-CURRENT: 800/288; 435/419, 435/468, 530/387.1

3. Document ID: US 20050260754 A1

L4: Entry 3 of 5

File: PGPB

Nov 24, 2005

PGPUB-DOCUMENT-NUMBER: 20050260754

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20050260754 A1

TITLE: Constructs and methods for the regulation of gene expression

PUBLICATION-DATE: November 24, 2005

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY
Kock, Michael	Schifferstadt	DE	
Bauer, Jorg	Ludwigshafen	DE	

US-CL-CURRENT: 435/455; 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMC	Draw. Desc	Image
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 4. Document ID: US 5283184 A

L4: Entry 4 of 5

File: USPT

Feb 1, 1994

US-PAT-NO: 5283184

DOCUMENT-IDENTIFIER: US 5283184 A

** See image for Certificate of Correction **

TITLE: Genetic engineering of novel plant phenotypes

DATE-ISSUED: February 1, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jorgensen; Richard A.	Davis	CA		
Napoli; Carolyn A.	Davis	CA		

US-CL-CURRENT: 800/285; 435/320.1, 800/300, 800/317.3, 800/323.1, 800/323.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KOMC	Draw. Desc	Image
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 5. Document ID: US 5231020 A

L4: Entry 5 of 5

File: USPT

Jul 27, 1993

US-PAT-NO: 5231020

DOCUMENT-IDENTIFIER: US 5231020 A

** See image for Certificate of Correction **

TITLE: Genetic engineering of novel plant phenotypes

DATE-ISSUED: July 27, 1993

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Jorgensen; Richard A.	Oakland	CA		
Napoli; Carolyn A.	Oakland	CA		

US-CL-CURRENT: 800/281; 435/320.1, 800/282

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequence](#) | [Attachments](#) | [Claims](#) | [KMC](#) | [Draw. Desc](#) | [Image](#)

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Terms	Documents
L1 and herbicide?	5

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DATE: Monday, April 16, 2007

<u>Hide?</u>	<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>
<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=YES; OP=ADJ</i>			
<input type="checkbox"/>	L5	Saccarose-6-phosphate phosphatase	1
<input type="checkbox"/>	L4	L1 and herbicide?	5
<input type="checkbox"/>	L3	Sucrose-6(F)-phosphate phosphohydrolase	0
<input type="checkbox"/>	L2	sucrose-6-phosphate phosphatase?	2
<input type="checkbox"/>	L1	sucrose-6-phosphate phosphatase	11

END OF SEARCH HISTORY